

TOP SECRET**WORKING PAPER**

MEMORANDUM FOR: Executive Director, NPIC

SUBJECT: Effects on NPIC of Multiple Target Coverage from
Special GMAIC KH-4 Mission 1033

1. Mission 1033 was primarily programmed at the request of the GMAIC to obtain daily coverage of a select group of targets such as operational missile launch complexes and missile test centers within the Sino-Soviet Bloc for the purpose of determining levels of activity and the movement of missile and missile related equipment at a specific installation on successive coverages and at certain times of the day. The mission was flown over an 11 day period (24 May-3 June) and was generally successful in acquiring the desired coverage.

2. No major problems were experienced by PAG, or NPIC support divisions in processing this mission, in spite of the mass of materials that most of the PIs had to handle in analyzing their individual targets. This large volume of material had been anticipated and plans were made and implemented whereby the PI who was responsible for a particular target was allowed the maximum amount of time to study his materials while supporting personnel and other photo interpreters (PIs) supported him by doing all of the administrative type tasks such as drawing and turning in film at the film vault, cutting film chips, labeling and indexing the photographic materials and recording mission data. It did take longer for the PIs to read out this type of KH-4 mission due to the fact that all coverage over a particular target had to be studied before a final write-up could be completed.

TOP SECRET

50X1

3. All the support divisions were queried regarding any problems they might have encountered during preparations for and after receipt of the materials, and especially during the OAK exercise. Negative replies from all but Publications Division (PD) indicate that no out-of-the-ordinary problems were encountered. PD indicated that the most serious strain was on operating the 826 card punch machines where the workload was double or triple normal because of the many photo reference lines that had to be typed. On the first part and to a lesser degree on the second part, the typists had to spend considerable time sorting the information from the photo references, then rearranging the references in the proper numerical sequence. On the second part, suggestions made to PAG to improve the organization of the reports were readily accepted and resulted in improvement. The large amount of material also required the assignment of one additional editor during peak workloads. It should be pointed out, however, that based on the workload of several recent past OAK efforts prior to Mission 1033, both PD and Collateral Support Division (CSD) had been alerted to the probability that additional support personnel might be asked for during future OAK and OAK Supplement efforts. This alert was based on the ever increasing number of COMOR and NPIC targets and the accompanying increase in target processing workload. In this respect it is still anticipated that future OAK and OAK Supplement efforts will require full use of the current number of 826 machines with the addition of one or possibly two machines to help out. An additional editor, or possibly two, together with additional support personnel from CSD will also be required for future missions.

ILLEGIB

TOP SECRET

4. On the intelligence side of the picture, a survey of the PIs show that most are disappointed in the "take"; there was very little new or additional knowledge derived from the mission, when compared to the amount of effort required to analyze their targets. Generally this is blamed on the type of photography -- KH-4 -- which because of its small scale, especially the ascending passes, makes any exacting detailed analysis or comparison extremely unreliable, and in the most cases impossible. It should be noted however that when the interpretability, stereo coverage, limiting conditions and scale of the photography are favorable then the changes in activity could be observed and reported. There are several examples of this type of activity described in the next paragraph.

5. The following are the significant highlights from Mission 1033 that represent the type of photographic analysis which can be correlated from this type of mission.

A. ICBM Complexes - At Verkhnyaya Salda Launch Site 5, on 24 May 1966, a possible missile was observed in front of the left missile ready building. On the 25th of May, a number of unidentified vehicles and pieces of equipment were observed in front of left ready building. Two days later, on the 27th of May, a possible missile was erected on the left pad with the transporter aligned with the erector. The following day, 28 May 1966, no missiles were observed at the site. At Launch Site 10 within the same complex, two probable missiles were seen in front of the left missile ready building on 25 May 1966 and a day later an erected missile was observed on the two launch pads. At Perm Launch Site 6, one and at times two missiles

TOP SECRET

50X1

were observed on the right launch pad for 6 consecutive passes of photography. In general, the level of missile activity discernible at ICBM complexes on this mission was rather low. With the exception of the missiles and erectors whose identification was based primarily on their size and positioning within a site, none of the equipment or vehicles could be given a positive identification.

B. Tyuratam Missile Test Center was covered by 11 passes of fair to good interpretability. The highest level of activity was observed at launch area G5-G6 where at least 10 vehicles or pieces of equipment are identified on each photographic coverage. The missile gantry was positioned at the apex of gantry tracks on each pass. Ascending passes on KH-4 photography does not permit the identification of vehicle/equipment types. Although differences in position of vehicles/pieces of equipment can be detected, in no case can any given vehicle/piece of equipment be positively identified as having moved from one point to another.

An excavation has been dug on the down range side of pad G2 which is similar to the one at G1, and a possible railbed is under construction across the downrange side of launch area G1-G2.

In areas under construction, no significant changes could be detected, although extension of ditching, and progress of earth mounding of buildings was observed.

At the single silo sites the position of the silo door could not be ascertained with certainty in most instances.

At pad A1 the members of the service tower were observed in various positions.

TOP SECRET

Although groups of vehicles/pieces of equipment were observed parked on the hardstands in launch area B2, their positions did not change significantly; and the groupings appeared to be similar to those observed on [REDACTED]

50X1

50X1

Vehicular activity noted at Launch Complex C was not unusual although a long vehicle/piece of equipment appeared on pad C1 on pass 146A, 2 June 1966.

Possible missile dollies, thin mast-like objects on the pads, and vehicular movement was observed on Complex H.

No significant activity was observed at Complexes D, E, F, G (other than G5-G6) and J, or at Launch Groups K, L, M, and N.

At those launch facilities having gantries, the gantries were only observed in their usual position to the rear of the pads.

In general miscellaneous vehicular and rail car activity was detected throughout the center, but with the exception of Launch Area G5-G6, most diurnal movement appeared to be routine construction/housekeeping activity. The time of transit over Tyuratam (early morning) may have given false impressions of activity - or lack of activity. Some of the vehicles/pieces of equipment observed in the same positions might have been in their overnight parking spots.

C. Kapustin Yar/Vladimirovka Missile Test Center is covered by 22 passes, however only 12 passes which were at least partially interpretable covered Launch Complex C, the MR/IRBM launch facilities. Continuing activity could not be determined in most cases on the first bucket due to lack of cover [REDACTED]

50X1

TOP SECRET

50X1

50X1

(26th, reported SS-4 -- erected missile on 1C-1, and vehicles/pieces of equipment on 3C; 27th, reported SS-4 -- missile gone from 1C-1, equipment still present on 3C).

The second bucket provided sequential coverage of Launch Complex C. Activity can be noted in several areas. At launch area 1C, a complete missile erection sequence can be observed at launch pad 1C-1. First an erector on the pad, then transporter and erector, and finally an erected missile with support vehicles adjacent.

At launch area 4C sequential coverage showed activity at the two modified silos at 4C-1 and an exercise at 4C-2 with an open silo on the 31st,

50X1

Activity at other launch complexes was either very minor or did not exist.

D. Sary Shagan Antimissile Test Center was predicted for 11 photographic passes on KH-4 Mission 1033. One pass observed the range each day from 24 May 66 to 3 Jun 66. Local time of coverage each day occurred between 1416-1724. Seven passes provided relatively clear photography while the remaining four passes ranged between scattered to heavy cloud cover over the range. Interpretability ranged from poor to fair.

All four launch complexes at the range were observed. Daily activity at Launch Complex B was discernible to some degree at the GALOSH missile launch positions. But identification of daily activity in the other areas was limited due to the small scale of the photography.

E. Shuang Cheng Tzu Missile Test Center was covered by eight interpretable passes.

50X1

TOP SECRET

Activity noted on the first bucket was a missile exercise at Launch Complex A

50X1

On the second bucket activity was observed at several locations. Construction is continuing at Launch Complex B as evidenced by the movement of rail cars and the hammerhead crane. Vehicles/pieces of equipment were observed at Launch Complex C, the SSM Housing and Support Area, and the SSM-SAM Assembly and Checkout Complex. New tent camps were also observed at or near each of the above facilities.

F. Perm Rocket Motor Test Facility was covered by 15 passes with fair to good interpretability and objects were seen in different positions at the isolated test position on three of these passes. However, the scale was too small to tell whether these objects were rocket motors or merely transporters. The activity shows that this test position is in frequent use, substantiating previous estimates of the importance of the isolated position. Rail car movement in the main test area was also observed. Four rail cars were seen on several passes and eight on another. Again the scale would not permit identification of these cars.

G. Kurumoch Rocket Engine Test Facility was covered by nine interpretable passes, but no activity other than blast marks, showing that tests had occurred in the recent past, was observed. Pass 99A, however, showed a light toned image near the base of Test Stand 2 on the aft camera only. This problem is now under study to determine if this represents the start of a test firing or the reflection of cooling water in the flame bucket.

ILLEGIB

TOP SECRET

50X1

I. This portion of the evaluation of Mission 1033 deals with three areas of intelligence: Ground, Naval and Air Order of Battle and will be treated in that order.

Ground OB: Unlike Air and Naval OB, the ground equipment is nearly impossible to positively identify on a KH-4 mission. As a result, the multiple coverage serves only to increase the chance that an installation will be observed. Isolated instances, at a tank firing range for instance, could establish a level of activity for the period of coverage if seen on imagery of good, clear interpretable photography.

Naval OB:

a. Bases - With daily coverage it is possible to mark the movements of vessels to a certain degree, at least by number and class of vessel, although neither KH-4 nor KH-7 provides sufficient resolution to be able to distinguish one vessel from another of the same class. Therefore, although the vessel count may remain constant, we could well be looking at different pendants. Level of activity is somewhat hampered by this gap in interpretability.

b. Shipyards:- Repetitive coverage of shipyards per se provides little advantage at the resolution of KH-4. If coverage is only to provide vessel counts, then the repetition is valid. If, however, the purpose

TOP SECRET

50X1

of the coverage is to provide work levels and production activity, KH-4 cannot provide the answers.

Air OB - Repetitive coverage on specific airfields, like that of naval bases, reflects changes in the number of aircraft, i.e., there are fewer fighters than were here 24 hours ago, but cannot insure that although the number has remained constant, entirely different aircraft are imaged on successive passes.

50X1

50X1

Unique aircraft can be

accounted for, but the remainder of the aircraft are usually grouped into broad categories such as "small swept wing" or "large swept wing", etc.

6. In summary the effects of exploiting this type of mission were minimal.

a. The mission did provide multiple coverage of selected targets as programmed.

b. It enabled the PI to observe gross levels of activity at most targets.

c. The small scale of the KH-4 photography did not permit the PI to identify missile or missile related equipment and ground order of battle equipment by type or differentiate a specific type of aircraft or vessel from another of the same type.

d. The mission did take longer to read out when compared to a normal KH-4 mission.

e. The effects that this mission may have on the intelligence community will not be known until a complete correlation has been made with other intelligence information and this may take several months.

50X1



f. It is the opinion of PAG that a similar mission utilizing the KH-7 camera system would have been of greater intelligence value although fewer targets would have been covered.



50X1

Colonel, USA
Assistant for Photographic Analysis, NPIC

Distribution:

- 1-Exec Dir/NPIC
- 1-Dir/NPIC
- 1-OPS/NPIC
- 1-PAG/NPIC
- 1-IPO/PAG/NPIC
- 1-S&TD/PAG/NPIC
- 1-GMD/PAG/NPIC



ILLEGIB